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Local Networks' Effects on Neighborhood and Community Cohesion*

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Abstract

Recent scholarship has suggested that cohesion at the neighborhood level may not translate into greater cohesion for the broader community, and may even have detrimental effects. Employing a sample from a recently-developed New Urbanist community within a southern city, we simultaneously explore the determinants of perceived cohesion with the local neighborhood and with the broader community. We find that there is indeed a positive relationship between the two in this sample. However, we find that the determinants of the two differ: while both strong and weak informal ties in the neighborhood increase perceived neighborhood cohesion, only weak ties foster perceived cohesion with the broader community. We find no effect of residents' structural positions within local networks on perceived cohesion beyond the effect of strong and weak ties. We discuss the implications of our findings for the broader literature viewing the effects of bridging and bonding social capital.

Nested Loyalties:

Local Networks' Effects on Neighborhood and Community Cohesion

A long line of social and political theorizing has argued that cohesion among residents is a key ingredient for healthy societies and communities. For instance, at the largest macro unit, Rousseau (1968) argued that in the ideal society citizens will experience a collective 'public will' that guides their interests over their own 'private will', allowing them to view the interests of all members of the larger society when making political and social decisions. Such a viewpoint would eliminate factionalism and produce beneficial results for the overall collectivity. A similar theoretical model has also been tested at the somewhat smaller geographical unit of the city/community. For instance, some theorists in one branch of the social capital perspective have argued that a sense of cohesion and trust is important for fostering an attachment to the larger city/community (Putnam 2000). In this view, to the extent that citizens feel a sense of belonging to a larger entity, they are more willing to engage in the sort of civic activity that provides benefits for all members of the city/community. This attachment and cohesion then has numerous effects such as supporting redistributive policies that reduce the amount of poverty (Tolbert, Lyson, and Irwin 1998), and even collective efforts to provide services that may reduce overall mortality (Kawachi, Kennedy, Lochner, and Prothrow-Stith 1997; Wilkinson 1996).

Yet another line of research has focused on the importance of cohesion for the smaller unit of analysis of healthy *neighborhoods*. Neighborhood cohesion is hypothesized to work in various ways. In one view, the sharing of resources among residents allows all 'boats to rise together' and keeps any households from suffering unduly. This perspective is thus similar to that of theoretical models of larger units of analysis, and posits that neighborhood

cohesion can have positive effects on health outcomes (Ellaway, Macintyre, and Kearns 2001; Putnam 2000), and that by watching out for each other households can reduce crime rates (Hartnagel 1979; Hirschfield and Bowers 1997; Lee 2000; Markowitz, Bellair, Liska, and Liu 2001; Morenoff, Sampson, and Raudenbush 2001). In another view, neighborhood cohesion enables households to band together to defend or lobby for the interests of the neighborhood (Alinsky 1971; Gans 1962). What these perspectives have in common is that they rarely consider the impact neighborhood cohesion has on the residents' sense of cohesion with the *overall city/community*.

While numerous studies have tested for the existence and determinants of cohesion at various geographical levels of analysis, there is a growing realization that cohesion at one geographic level does not necessarily translate into cohesion at another (Forrest and Kearns 2001; Kearns and Forrest 2000). In some instances, local neighborhoods with high levels of cohesion will cause fragmented allegiance to the broader city or community (Gans 1962; Granovetter 1973). This can occur if a tightly knit neighborhood withdraws from the larger city/community, leading to less overall cohesion (Butler 2003), or it can occur if the neighborhood feels rejected by the larger city/community (Meegan and Mitchell 2001). Given that the aggregate construct of cohesion at one geographic level does not necessarily translate into cohesion at a higher level of aggregation, a related question is to what extent the individual-level construct of perceived neighborhood cohesion relates to the individual-level construct of perceived sense of cohesion with the larger city/community.

Nonetheless, studies have failed to study perceived cohesion among different geographic levels simultaneously, and as a consequence research has failed to test whether the determinants of perceived cohesion with one geographic unit are the same as those for different geographic units. Our study addresses this lacuna by simultaneously measuring

perceived cohesion at two geographic levels of analysis: the local neighborhood and the larger city/community. To our knowledge, no study has simultaneously studied the determinants of perceived cohesion at two such geographic levels. We test whether greater cohesion with the local neighborhood enhances cohesion with the larger city/community, or whether there is a "crowding out" effect as some theorists have speculated (Forrest and Kearns 2001; Kearns and Forrest 2000). We are also able to test the determinants of perceived cohesion with each of these geographic units of analysis, and we particularly focus on the question of whether neighborhood networks increase perceived cohesion with the local neighborhood at the expense of a reduced identity with the larger city/community. This has implications for policy makers: it is clearly useful to know if performing an intervention that increases the level of perceived neighborhood cohesion among residents also *simultaneously* reduces their attachment to the larger city/community.

As a definitional issue, we point out that the term *community* is used in many fashions. Some neighborhood studies have used the term *community* in a fashion synonymous with *neighborhood*. A large body of literature views *community* as a collectivity that need not have any geographical location. We contrast two geographical locales, one nested within the other: what we term the local neighborhood (which in our study is a collection of about 150 homes—what some might term a "community"), and what we term the larger city/community (which is an incorporated city of about 50,000 residents). For the purposes of brevity, in this paper we will refer to these respectively as the *neighborhood* and the *community*, acknowledging that these terms have different meanings in other contexts.

Studies of cohesion

Sociologists have long been concerned with the level of cohesion in societies, communities, and neighborhoods. Durkheim (1984 [1933]) viewed cohesion in societies as reducing the amount of anomie that individuals might otherwise experience. Tönnies (1887 [2001]) later portrayed a typology of communities that progressed through various forms of cohesion based on differing levels of *Gesellschaft* and *Gemeinschaft* (Nisbet 1993). The central question for these high modernist theorists was: how can individuals avoid anomie while living in increasingly large cities?

While the concept of cohesion can be detected at both the individual and the aggregate level, there clearly must be an aggregate level to discuss the notion of cohesion. While we can consider various levels of aggregation—indeed, theorists often speak of the degree of cohesion experienced by a neighborhood or a society—the benefits of cohesion at one level need not necessarily imply cohesive benefits at another (Portes 2000). Nonetheless, virtually all theoretical models suggest that this notion of aggregate cohesion is experienced at the micro level by the individuals within the aggregate (Friedkin 2004). Thus, the individuals in an aggregate with a low degree of cohesion will experience 'anomie'. One view is that the cohesion in this instance comes from the structure of relations among the individuals, and the psychological construct of anomie is a consequence of this. Another view is that the psychological feeling of attachment leads to behavior that reinforces the perceived cohesion of other individuals in the aggregate. Thus, there is a tension between whether to measure cohesion as a behavioral construct at the level of the aggregate unit, or to measure it as an attitudinal construct at the level of the individuals that compose the aggregate.

Only recently have scholars in the social network literature begun to seriously tackle the issue of measuring cohesion as a behavioral construct at the level of the aggregate. These

studies use various structural social network constructs as reachability and the number of paths linking all nodes in the network to capture *cohesion* (Markovsky 1998; Markovsky and Lawler 1994; Moody and White 2003). It is important to point out that these behavioral measures are *structural* ones: in these theories it is not the *number* of ties that creates cohesion, but rather the *overall form of ties* in the group that are important.

A limitation of structural network measures is their data-intensive nature, necessitating the need for censuses of all residents in a community; as a consequence, the bulk of research has focused on cohesion as an *attitudinal* measure. Among studies measuring cohesion as an attitudinal construct, a distinction can be made between those asking individuals to report on *their own feelings* of cohesion and those asking them to estimate the perceived cohesion of *others in the locale*. Urban studies frequently adopt the approach of asking respondents to assess the attitudes of others in the locale, and emblematic of this approach is the scale used by Sampson and colleagues (Sampson, Morenoff, and Earls 1999; Sampson, Raudenbush, and Earls 1997), in which perceived cohesion is measured such questions as: 1) people around here are willing to help their neighbors; 2) this is a close-knit neighborhood; 3) people in this neighborhood can be trusted, 4) people in this neighborhood generally get along with each other, 5) people in this neighborhood share the same values. Note that these questions require respondents to assess information that they may not always have accurate access to—i.e., the extent to which others get along or are willing to help others. A particular line of research has combined this measure of cohesion with a measure of the expectations of informal social action on the part of others into a larger construct referred to as *collective efficacy* (Browning and Cagney 2002; Morenoff, Sampson, and Raudenbush 2001). For some research questions, it is clearly useful to know the respondent's perception of how other residents might behave in certain instances, which is precisely what

collective efficacy measures (Browning and Cagney 2002). On the other hand, the intellectual challenge of requiring respondents to assess the feelings of others has led other scholars to utilize scales in which respondents only assess *their own* feelings.

Two key dimensions of cohesion underlie most of the various scales asking respondents to gauge their own perceived cohesion. William McDougall articulated these dimensions in his book *The Group Mind* (McDougall 1920: 86): "The development of the group spirit consists in two essential processes, namely, the acquisition of knowledge of the group and the formation of some sentiment of attachment to the group." Many researchers now agree that these two dimensions are particularly important forms of perceived cohesion, and we employ them in our measure below (Bollen and Hoyle 1990; Hogg 1992; Tajfel 1981; Tajfel and Turner 1986).[1] While there are other possible conceptualizations of the construct of cohesion, there is a rich theoretical tradition in the group cohesion literature focusing on the presence of these two sub-constructs and how they need not always align perfectly (Lau 1989; Tajfel 1981; Tajfel and Turner 1986; Turner 1987). Studies have suggested that threat to the group or low group self-esteem can lead to distancing oneself from the group (Ethier and Deaux 1994; Phinney, Chavira, and Tate 1993), while a review concluded "it appears that self-identification, a sense of belonging, and pride in one's group may be key aspects of ethnic identity that are present in varying degrees, regardless of the group" (Phinney 1990: 507).

An advantage of this measure of cohesion is that it may be important to parse these two sub-constructs for neighborhood cohesion. For instance, Hunter (1974) found that Chicago residents who reported feeling attached to their neighborhood did not necessarily like the neighborhoods, and vice versa. It is therefore possible that the determinants of each of these sub-constructs may differ: while some factors may increase residents' feelings of

attachment to the neighborhood or community, they may have no effect on their evaluation of the quality of the neighborhood or community. We therefore suggest that each of these sub-constructs are interesting to study apart from the larger question of whether they together constitute a larger construct of *cohesion*. Additionally, we are able to test whether each of these sub-constructs and their determinants behave similarly at our two geographic levels of analysis.

Theoretical model and hypotheses

An important theoretical question is whether cohesion at one geographic unit of analysis has a positive effect on cohesion at another level, or a crowding out effect. Given the recent theorizing on the possible relationship between perceived cohesion with different geographic units, we are uniquely able to explore this question here. For instance, one view is that greater perceived cohesion with the smaller geographic unit may lead to less perceived cohesion with the larger geographic unit (Forrest and Kearns 2001; Kearns and Forrest 2000). This suggests a "crowding out" effect in which increasing the level of cohesion at one geographic level diminishes the amount available for other levels, suggesting that individuals only have a finite amount of cohesion to spread among different competing groups (Paxton and Moody 2003). That is, as individuals begin to identify more strongly with a subgroup (i.e., the neighborhood), they may view themselves as culturally distinct from the larger group (i.e., the community), lowering their emotional attachment to the larger group (Hogg 1992; Markovsky and Lawler 1994; Tajfel 1982; Tajfel and Turner 1986). In an extreme case, the individuals would come to view this subgroup as a group in itself, completely separate from the original group and thus competing for one's time and sentiments. This suggests the following hypothesis:

Hypothesis 1. The crowding out effect predicts that individuals with a greater level of cohesion with the local neighborhood will express a lower level of cohesion with the larger community.

On the other hand, there may be a reinforcing effect between cohesion at the two geographic units. For instance, one study suggested that a consequence of greater cohesion at the level of the city/community is that cohesion within neighborhoods will be more effective when organizing to address neighborhood problems (Donnelly and Majka 1996). To the extent that there is a feeling of success in addressing neighborhood problems, this may then translate into increased perceived cohesion with the local neighborhood. Note that this could also work in the other direction: to the extent that there is greater perceived cohesion with the local neighborhood, this may enhance the ability of the neighborhood to petition the larger community's help in addressing problems; this success might then translate into a greater perceived cohesion with the larger community. Regardless of the direction of this process, this suggests the following competing hypothesis:

Hypothesis 2. The reinforcing effect predicts that individuals with a greater level of cohesion with the local neighborhood will express a greater level of cohesion with the larger community.

The Determinants of Cohesion

Urban theorists have long focused on explaining the factors that foster greater levels of perceived cohesion among residents. While a classic perspective was the linear-development model's view that increases in population size, density, and heterogeneity led to psychic overload and anomie on the part of individuals (Wirth 1956), later models focused on the important role of social interaction.[2] For instance, the systemic model built on the early

Chicago school perspective in suggesting that length of residence and neighborhood stability create more complete neighborhood networks and a resulting increase in psychic attachment to the neighborhood (Kasarda and Janowitz 1974). Here, it is local networks that cause increased perceived *neighborhood* cohesion.[3] Most research has focused on how neighborhood networks affect *neighborhood* cohesion, and studies have generally found a positive relationship. Such a positive relationship was found in a study of a Rochester, NY neighborhood in 1974 (Hunter 1975), which replicated a study of this same neighborhood from 1952 (Foley 1952), a study of 500 neighborhoods in Great Britain in 1984 (Sampson 1991), a study of neighborhoods in Detroit in 1975 (Connerly and Marans 1985), and a study of 81 randomly selected blocks in Nashville, TN (Lee, Campbell, and Miller 1991). There is additional evidence that neighboring is related to the similar construct of neighborhood satisfaction (Adams 1992; Bolan 1997; Connerly and Marans 1985). This suggests the following hypothesis:

Hypothesis 3. Individuals with a greater number of network ties in the neighborhood will have more perceived neighborhood cohesion.

While these results of the effects of general neighborhood networks are consistent, there are theoretical reasons to expect that the effect of neighborhood ties on perceived cohesion may differ based on the strength of those ties. While the systemic model's view that increasing length of residence will increase cohesion does not specify if these ties that develop over time are strong or weak, recent studies have often focused on the effect of strong ties. Indeed, this is hardly surprising given the large literature on the importance of strong ties for social support in numerous situations (Berkman, Glass, Brissette, and Seeman 2000; Hurlbert, Haines, and Beggs 2000; Szreter and Woolcock 2004). It thus seems reasonable to suppose that strong ties are important for providing the sort of emotional

resources that foster a sense of neighborhood cohesion (Lee, Campbell, and Miller 1991; Mesch and Manor 1998). For instance, a study of a large city in Israel found that the presence of close ties increased feelings of neighborhood attachment (Mesch and Manor 1998), as did a study of blocks in Nashville, TN (Lee, Campbell, and Miller 1991).

Hypothesis 4. Individuals with a greater number of strong ties in the neighborhood will have more perceived neighborhood cohesion.

Perhaps less intuitively, there is also reason to suspect that *weak* ties will lead to more perceived cohesion with the local neighborhood. Fararo and Skvoretz (1987) point out that since weak ties require less time commitment they allow more ties to be formed and hence result in an overall network that has greater connectivity. Their model predicts this will lead to greater overall solidarity in the group and thus should also lead to greater perceived cohesion on the part of the those maintaining these weak ties. Indeed, a recent study suggested that the psychic reinforcement individuals get from frequent brief contacts with neighbors is the psychological underpinning of this increased cohesion (Henning and Lieberg 1996). An analogous argument was put forth by Bellair (1997) in suggesting that the weak ties to others in the local neighborhood can be more effective in reducing the level of neighborhood crime: in this model, occasional contacts create a sense of trust and assurance that others will act to counter problems the neighborhood might face. While this has led to the notion of collective efficacy, there is also reason to suspect that it will foster the emotional construct of a feeling of perceived cohesion with the neighborhood. Despite the plausibility of this hypothesis, fewer studies have tested the effects of weak ties on perceived cohesion. While a study of 500 households in a large city in Israel found that knowing more neighbors (a measure of weak ties) had no effect on neighborhood attachment (Mesch and Manor 1998), a study of 81 blocks in Nashville, TN found a positive relationship (Lee,

Campbell, and Miller 1991). A study of a Swedish housing area at two time points found that weak ties in the neighborhood were a particularly important source for personal satisfaction (Henning and Lieberg 1996). This suggests the following hypothesis:

Hypothesis 5. Individuals with a greater number of weak ties in the neighborhood will have more perceived neighborhood cohesion (though this effect may be weaker than that of strong ties).

When we come to the question of perceived cohesion with the *larger community* we have theoretical reasons to expect differential effects based on the strength of the ties. A structural network view suggests that the time commitments required of strong ties to others in the local neighborhood will not only increase perceived cohesion with the local neighborhood, but will also detract from identifying with the larger community. Simmel (1971) argued that as a result, individuals will create their strongest identities with the smallest and largest geographic entities. The importance of strong ties for fostering an emotional attachment to the subgroup at the expense of the large entity can be seen in Lawler's (1992: 327) observation that "positive emotion strengthens attachments to proximal subgroups more than to larger, more encompassing collectivities." Indeed, Paxton and Moody (2003) found such an effect where greater identification with subgroups reduced identification with the larger group. Kearns and Forrest (2000) echoed this concern that a strong identification at the local level will lead to fewer shared values with the larger community. Thus, we hypothesize that:

Hypothesis 6. Individuals with a greater number of strong ties in the neighborhood will have less perceived community cohesion.

On the other hand, the structural network view would suggest that weak ties to others in the neighborhood should not entail the sort of time commitments that would detract from

identifying with the larger community. Indeed, a body of literature building on the notion of bridging social capital has suggested that the presence of these weak ties will provide linkages that enhance cohesion with the smaller geographic level while concomitantly leaving time available for contacts with others in the larger community which should thus enhance perceived community cohesion (Beyerlein and Hipp 2005; Putnam 2000; Woolcock and Narayan 2000). Similarly, Macy (1998) built a theoretical computational model in which trust in strangers emerged locally among neighbors, but then diffused outside the neighborhood through weak ties. This model is consistent with the notion that those maintaining weak ties in the neighborhood will be most able to establish a trust and hence an identity with the larger community. There have been fewer empirical tests of this proposition, though Campbell and Lee (1992) found that those with larger neighborhood networks were more integrated into society in general, and Scherzer (1992) suggested in his historical study of New York city that the most closed communities were the ones characterized more by social pathology rather than social support.

Hypothesis 7. Individuals with a greater number of weak ties in the neighborhood will have more perceived community cohesion.

Finally, a structural network argument suggests that not only do the number of strong and weak ties matter for fostering cohesion at the neighborhood and community level, but that one's *position in the network of ties* will have important implications. That is, it is not just important how amany ties one has, but who those ties are, and how they are connected throughout the neighborhood. For instance, if one is connected to other members of the local neighborhood who are themselves highly connected within the local neighborhood, this should enmesh the individual more tightly in the issues and concerns of the local neighborhood, above and beyond a simple count of the number of ties (Markovsky and

Lawler 1994). While this should lead to a greater perceived cohesion with the neighborhood, it likely comes at the expense of reduced attachment to the larger community. Again, Paxton and Moody (2003) found that greater identification with a subgroup reduced identification with the larger group in a study integrating both behavioral and attitudinal measures of cohesion in testing emotional attachment to a sorority in a university in the south. We extend this approach here in viewing the effects of network position on emotional attachment to the neighborhood and the community. These considerations suggest twin hypotheses that mirror those of strong ties:

Hypothesis 8. Individuals more structurally central in the neighborhood network will have more perceived neighborhood cohesion.

Hypothesis 9. Individuals more structurally central in the neighborhood network will have less perceived community cohesion.

Data and Methods

Our data come from a survey conducted in a relatively new neighborhood of about 150 housing units in the southern United States. Thus, our "neighborhood" is about 20 percent as large as the typical block group---a unit of analysis that some have suggested may capture most local interactions (Grannis 1998). The first houses were built in 2001. The neighborhood is a "New Urbanist" development within a city of approximately 50,000 residents, which means it includes several different kinds of housing units, ranging from rental apartments and "affordable" townhomes to luxurious custom homes costing as much as $2 million. In addition, a "downtown" area includes a grocery store, restaurants, shops, and services. There are medical services, a retirement community, a health club, and an outdoor pool in the complex. The residents are mostly middle- and upper-middle income white

homeowners in this neighborhood just a couple of miles from the downtown of the city within which it is set. This neighborhood is adjacent to other city neighborhoods, and thus is not geographically isolated.

Our sampling frame was obtained through a listing obtained from the development's homeowner's association. We conducted the mail survey in the Fall of 2003, employing many of the "total design" techniques of Dillman (1978): we mailed an introductory letter and the survey instrument to all adult respondents in the household; we then followed up with a postcard reminder one month later; and then two months later we sent a letter reminder to those who failed to complete the survey and mailed a new survey instrument to those who no longer had the one from the initial contact. We utilized techniques such as using stamps on enclosed self-addressed return envelopes rather than a postage meter or business reply mail. The result of these various techniques was a final response rate in which members of 42 percent of the households (35 percent of the total adults) returned completed surveys. Our analyses are performed on the 86 respondents returning surveys. In some instances more than one household member returned a survey instrument: since we wanted to include both household members in our study to account for possible network differences, we accounted for this non-independence by using a Huber/White sandwich estimator clustering on households to calculate standard errors.

Dependent Variables

Our key dependent variables are the questions of the Bollen perceived cohesion scale (Bollen and Hoyle 1990). This scale builds on McDougall's (1920) observation that cohesion consists of the two dimensions of sense of belonging and feelings of morale. Sense of belonging is the feeling of 'groupness' experienced by the individual: the extent to which she feels part of a larger whole. Feelings of morale represent her *evaluation* of that group: i.e.,

whether she views the characteristics of the group positively. Thus, an individual can feel a strong sense of belonging to a particular group, but take a dim view of the qualities of that group. An advantage of this scale is that it has been employed in several studies using a structural equation modeling approach, allowing its properties to be systematically assessed and validated on different samples (Bollen and Hoyle 1990; Bollen and Medrano 1998; Chin, Salisbury, Pearson, and Stollak 1999; Moody and White 2003).[4] Although the two dimensions of this scale (morale and belonging) are frequently found to be highly correlated, Bollen and Hoyle (1990) caution against making the mistake of assuming that they are not conceptually distinct. As they point out, the fact that height and weight are often highly correlated does not preclude us from making a conceptual distinction between these constructs.

This perceived cohesion scale is composed of three questions related to belonging and three questions related to morale. We asked the same questions regarding both the local neighborhood and the larger community. Thus, the belonging questions were: 1) I feel a sense of belonging to ___ . 2) I feel that I am a member of the ___ community. 3) I see myself as part of the ___ community. The blanks are filled in with the name of the local neighborhood (for the neighborhood cohesion scale) or the name of the city (for the community cohesion scale). The feelings of morale questions were: 1) I am enthusiastic about ___. 2) I am happy to live in ___. 3) ___ is one of the best neighborhoods (cities) in the nation.

Independent Variables

Our key independent variables are measures of informal ties in the neighborhood. To capture the informal ties of neighborhood interaction, we provided respondents to the survey a list of all residents in the neighborhood, and asked them which neighbors they: 1) talk to; 2)

visit in their homes; 3) feel close to; 4) communicate with by email; and 5) communicate with by phone. To calculate the total number of ties, we then created a sum for each respondent of the total number of residents they listed as having any type of contact with. To calculate the number of weak ties, we subtracted any links that were described as "feel close to" from the total count of ties. To calculate the number of strong ties, we counted the total number of links that were described as "feel close to." We feel confident using this measure of "closeness" as a measure of tie strength since Marsden and Campbell (1984) found in a multiple indicators study that closeness is the best indicator of tie strength. Finally, we also included a measure of structural network position, employing an algorithm developed by Moody (2000). We calculated the Bonacich centrality measure of all neighborhood respondents to the survey based on the presence of any tie, regardless of tie strength (Bonacich 1972). In this measure, an actor's centrality is a function of how connected their contacts are. The equation can be expressed as:

$$(I-\beta\#Z)^{-1}*Z*W$$

where I is an identity matrix, Z is an N x N adjacency matrix showing all ties between residents, W is an N x 1 vector of 1's, # represents element-wise multiplication, and β is a value chosen to represent the power of the centrality score (Bonacich 1987; Moody 2000). We use a value of .1 here for β (note that negative values can be used to represent the negative effect of ties in competitive contexts).

We also included other control variables to minimize the possibility of obtaining spurious results. We captured *formal* social ties with two measures. First, we constructed a measure of the number of organizations the respondent volunteers for. This captures active membership, rather than simply counting passive, "check-writing" memberships (Putnam

2000; Sobieraj 2006). Second, to capture the effect of religious organizations we included a measure of the frequency of attending religious services (the responses were: 1) never; 2) a few times a year; 3) several times a year; 4) once or twice a month; 5) almost every week; 6) once a week; 7) more than once a week). To the extent that some churches demand time and emotional commitment from members, they may inhibit the ability of adherents to form strong geographic attachments to the neighborhood or larger community (Iannaccone 1994).

A line of research suggests that conflicting interests will inhibit the ability of some individuals to engender a sense of neighborhood or community cohesion. Since time spent working may inhibit such cohesion (Hochschild 1997; Schor 1991), we included a measure of the number of hours worked the previous week. To test Putnam's (1995; 2000) thesis that television viewing inhibits civic engagement and hence possibly cohesion we included a measure of the number of hours watching TV in the previous week. To capture effects of stage of life course, we included measures of age, gender, whether or not the respondent is married, and the number of children less than 18 years of age. To measure socio-economic status (SES) we included measures of income (the responses were: 1) less than $20,000; 2) $20-40,000; 3) $40-60,000; 4) $60-80,000; 5) $80-100,000; 6) $100-150,000; 7) more than $150,000) and education (the responses were: 1) less than high school; 2) completed high school; 3) some college; 4) bachelor's degree; 5) beyond a bachelor's degree).[5]

The summary statistics for the variables used in the analysis are shown in Table 1.[6] We note a couple of features. First, the number of ties in this neighborhood is relatively low: on average, about two ties per respondent. This contrasts with a study of a Toronto neighborhood that found more than twice as many contacts per respondent (Hampton and Wellman 2000). This is likely due to the relative newness of the neighborhood we are studying. Second, it is theoretically important to note that the level of *neighborhood cohesion*

is generally higher than the level of *community cohesion*. As can be seen in these summary statistics, for five of the six indicators of cohesion the mean value is higher for the neighborhood indicator than it is for the comparable community indicator. This is consistent with Simmel's argument that individuals will feel the greatest attachment with the smallest and the largest groupings (Simmel 1971). The one striking exception is the question regarding feeling that the neighborhood or community is the best: for this question respondents felt more strongly about the quality of the overall community than they did about the local neighborhood. Given that this is a new neighborhood built on New Urbanist principles, the greater sense of community superiority is an interesting sidenote.

>>>Table 1 about here<<<

Methodology

We used structural equation modeling, estimating all models in M-Plus 3. This allowed us to handle missing data through full information maximum likelihood (FIML). FIML allows utilizing the information from all cases, and requires the less stringent assumption of missing at random rather than listwise deletion's assumption of missing completely at random (for a complete discussion of the distinction between types of missing data, see Rubin 1976; Rubin 1987). We employed a Huber/White sandwich estimator to calculate standard errors that appropriately account for households in which more than one respondent returned a survey. We first performed a confirmatory factor analysis model on our measures of cohesion. Following that, our key theoretical tests viewed the effect our predictors have on these latent factors.

Results

Confirmatory Factor Analysis Model of Neighborhood and Community Cohesion

We begin by viewing the confirmatory factor analysis solution of our model.[7] It is encouraging to note that the results for the two measures of cohesion are consistent with past studies using this scale. We see that the six indicators of this cohesion scale have a high degree of reliability based on their explained variances, as shown in Figure 1. The explained variances (R^2's) for the belonging dimensions of cohesion at the neighborhood and community levels range from .79 to .94, while the measures for the sense of morale dimensions range from .63 to .90. Thus, these latent constructs are largely successful in explaining the variance of these measures.[8]

>>>Figure 1 about here<<<

Of particular interest is the pattern of correlations between these constructs. First, consistent with past research employing this Perceived Cohesion scale, we see a high degree of correlation between the sense of belonging and feelings of morale dimensions at each geographic level. Thus, there is a .90 correlation between belonging and morale at the neighborhood level, and a .84 correlation between belonging and morale at the community level. People who feel a strong sense of belonging to the neighborhood also feel strongly about the quality of the neighborhood. It is reassuring that these are the highest correlations among these factors, consistent with our theoretical rationale for these measures.

We are particularly interested theoretically in the correlation between neighborhood-level cohesion and community-level cohesion: recall that to the extent that "crowding out" occurs, according to hypothesis 1 these two measures will be *negatively* correlated. Instead, in support of hypothesis 2, we see in this Figure evidence for a positive, reinforcing effect between sense of belonging to the neighborhood and sense of belonging to the community, given the .45 correlation. The relationship between community and neighborhood feelings of

morale has a similar magnitude.[9] We next explore the determinants of neighborhood cohesion, and whether they differ from those of community cohesion.

Latent Variable Model of the Determinants of Neighborhood and Community Cohesion

We begin our study of the determinants of neighborhood and community cohesion by estimating a model that does not include our neighborhood network measures. A key takeaway point from this model presented in Table 2 is the small effect these demographic variables and our measures of formal voluntary organization membership have on perceived cohesion with the local neighborhood. None of the measures reaches statistical significance, and the model only explains 7 to 8 percent of the variance in neighborhood sense of belonging and morale. On the other hand, these measures explain between 23 and 31 percent of the variation in perceived cohesion with the larger community. We see strong evidence that volunteering for an organization increases both feelings of belonging and sense of morale with the larger community. Volunteering for one additional organization increases community sense of morale .35 and belonging .50. This is consistent with the notion that the linkages and interests fostered by such activity (i.e., bridging social capital) create a sense of identity with the larger community. In contrast, it is interesting to note that the highest SES households in this neighborhood exhibit less identity with the larger community, suggesting that they may be withdrawing from the larger community when moving to this neighborhood. This may be due to competition from the professional networks of these high SES residents. Given this limited ability to explain the determinants of neighborhood cohesion using demographic variables, we next move to models including our neighborhood network measures.

<<<Table 2 about here>>>

While the following models view the effects of neighborhood networks on the perceived cohesion of these residents, they still include all of our control variables. We begin by testing the effect of total network ties on perceived cohesion with both the local neighborhood and the larger community. We see in model 1 of Table 3 that including this measure greatly helps explain the variation in perceived cohesion with the local neighborhood: we have nearly doubled the variance explained for neighborhood morale from 8 to 15 percent, and tripled the variance explained for neighborhood sense of belonging from 7 to 22 percent. This is dramatic support for hypothesis 3 that these neighborhood networks have a strong effect on perceived *neighborhood* cohesion: each additional network tie increases neighborhood sense of morale over half a point and increases neighborhood feelings of belonging .87 points. On the other hand, we see here that a simple total count of the ties one has in the neighborhood explains little of the variance in perceived cohesion with the *larger community*, and, indeed, we hypothesized no such relationship.

<<<Table 3 about here>>>

Given this evidence of the importance of network ties for fostering cohesion, we next distinguish between the *strength* of ties for explaining cohesion. In support of hypothesis 4, we find that the presence of strong ties has a particularly strong effect on neighborhood perceived cohesion, as seen in model 2 of Table 3. The coefficients for the effects on neighborhood sense of belonging and morale are both about double the magnitude of the effects in the model using all ties as a predictor. Thus, we see evidence here that while fewer ties in the neighborhood are strong rather than weak (1.4 weak ties per person on average as opposed to 0.67 strong ties per person, as seen in Table 1) these strong ties are particularly important for fostering cohesion with the local neighborhood. On the other hand, there is virtually no evidence here that these strong local ties foster cohesion with the larger

community. This is an important finding pointing out the geographical specificity of the effect of such strong ties on fostering cohesion with a geographical unit. Nonetheless, we do not find support for hypothesis 6 that these strong ties will actually *reduce* perceived cohesion with the larger community: while the effect on community sense of morale is indeed negative, it does not reach statistical significance.

This finding for strong ties gets placed in particularly stark light when we contrast its effect with that of weak ties. First, in support of hypothesis 5, model 3 in Table 3 shows that weak ties also have a positive effect on neighborhood sense of belonging and morale—albeit somewhat weaker than the effect of strong ties. Interestingly, given that the size of this effect for weak ties is about half that of strong ties while the average resident has about twice as many weak ties as strong ties, the overall effect of weak and strong ties on neighborhood cohesion is very similar. Importantly, in support of hypothesis 7, we see that weak ties also have a positive effect on perceived cohesion with the larger community. For scholars working in the bridging social capital literature, this is an important finding as it suggests that these more casual ties (which plausibly require less of a time commitment than do strong ties) are able to foster perceived cohesion at both the local neighborhood level as well as the larger community level.

We next move beyond a simple count of the type of ties respondents report with neighbors and ask whether their position in the network structure has important consequences. In a model including a measure of the manner in which residents are linked to other residents (the Bonacich centrality score)—but removing our measures of number of ties—we find support for hypothesis 8 as this measure has a strong positive effect on neighborhood sense of belonging and morale, as seen in model 4 in Table 3. However, we find no support for hypothesis 9's prediction that a high degree of centrality will decrease

perceived cohesion with the larger community, as our model shows no significant relationship. Thus, while weaving a tight web with neighbors does not increase cohesion with the surrounding community, at least we can also conclude that it does not *decrease* such cohesion.

Models including the network measures simultaneously

While the previous models tested our three network measures separately, we conclude by exploring the effects of weak ties, strong ties, and network structure location simultaneously. We begin by testing a model including both strong and weak ties simultaneously, and find similar effects to the two models testing them separately. As seen in model 1 in Table 4, each close tie has about twice as strong an effect on neighborhood sense of belonging as does each weak tie. Importantly, we again see the stark differences in impact on perceived cohesion with the larger community for strong and weak ties: additional weak ties result in greater sense of belonging and morale with the larger community, while additional strong ties have essentially no effect.

<<<Table 4 about here>>>

In our final model, we take into account position in the network structure simultaneously with our simple counts of strong and weak ties. It is clear in model 2 of Table 4 that position in the network structure provides little additional information when it comes to understanding the determinants of neighborhood perceived cohesion in this sample. The effect of both strong and weak ties remains robust to position in the network structure for explaining neighborhood sense of belonging. At the same time, position in the network structure as measured by the Bonacich centrality score provides no additional information on *neighborhood* perceived cohesion. Nonetheless, an interesting effect emerges from this

model: while increasing numbers of weak ties will increase perceived cohesion with the larger community, if those ties are to other highly central residents in the neighborhood (thus increasing one's Bonacich centrality score) there will be a countervailing negative effect on cohesion with the *larger community*. This finding conforms to network models of solidarity and cohesion: while increasing weak ties to residents who are also weakly tied in the neighborhood will increase the bridging nature of one's own network and thus lead to a greater sense of perceived cohesion with the larger community, if those ties are to others who are tightly integrated into the local neighborhood there will be no concomitant increase in perceived cohesion with the larger community.[10]

Summary and Conclusion

We have explored perceived cohesion with two geographic units—the neighborhood and the larger community—as well as the determinants of this cohesion. While cohesion with each of these geographic locales has considerable importance for various outcomes and has thus been the object of considerable past research, studies have failed to view them simultaneously. Doing so here has provided some key insight. First, consistent with theoretical models suggesting that greater attachment will be formed with smaller groups (Simmel 1971: 267) and past research with this perceived cohesion scale (Bollen and Hoyle 1990), we found that the amount of perceived cohesion was greater with the smaller geographic unit. That is, respondents expressed a higher average degree of cohesion with their neighborhood than with the larger community. Second, an important finding of this study was the positive relationship between neighborhood and community cohesion. In general it is *not* the case that feeling a stronger attachment to the neighborhood will lead to

less attachment to the larger community. In fact, we found a positive correlation of about .50 between our measures of neighborhood and community cohesion.

Third, we found important differences in the determinants of neighborhood and community cohesion. We found that viewing the strength of the tie is important when viewing the effects of neighbor networks: strong ties have a particularly strong positive effect on perceived cohesion with the local neighborhood, but have virtually no effect on cohesion with the larger community. This conforms to theoretical models suggesting that these strong linkages will foster cohesive subgroups but have no effect on cohesiveness with larger entities. It is important to point out that there at least was not a concomitant *reduction* in perceived cohesion with the larger community due to the presence of these strong ties. On the other hand, we found that weak ties not only increased perceived cohesion with the local neighborhood, they also increased perceived cohesion with the larger community. This finding is consistent with structural network arguments and bridging social capital theories that the minimal time investment of such ties allows more time for creating numerous linkages. And these numerous linkages then seem important for fostering cohesion across various geographical contexts.

The effects we found for these predictors were generally stronger for sense of belonging than they were for feelings of morale. This points out the importance of measuring both dimensions of cohesion, as their conceptual similarity should not obscure the very important differences between them and what determines them. Past studies have pointed out that feeling a sense of belonging need not necessarily translate into a sense of morale, and our findings reinforce this point. For instance, Wilson (1996) pointed out that in impoverished neighborhoods, a sense of belonging need not translate into a positive evaluation of the neighborhood.[11] Likewise, others have pointed out that cohesiveness and residential stability

in poor neighborhoods need not translate into a more positive outcome for the neighborhood (Rohe and Stewart 1996; Warner and Pierce 1993; Warner and Rountree 1997). In our study of a relatively upscale neighborhood a similar distinction can also be made between sense of belonging and sense of morale. This reinforces the point that whereas these two constructs are highly correlated (.90 in our sample) they nonetheless are importantly distinct. Indeed, it is worth noting that while our findings indicated that the network relations we observed are more likely to have an effect on feeling a part of the neighborhood or community than they are to feel strongly about the quality of the neighborhood or community, to the extent that civil society relies upon individuals who feel an attachment to the political body, this dimension of belonging is the one we are most interested in. One would hope such attachment would encourage those who are less satisfied with the state of the neighborhood or community to become involved in efforts to change things. Thus, this distinction between these two sub-constructs may be particularly important for studies of more impoverished neighborhoods.

There are some limitations to our study. First, our study focused on a single new neighborhood in a southern city. Thus, caution must be employed when generalizing these findings to other locations, and to older neighborhoods. Second, our sample size was relatively small. Although we used ancillary estimation techniques to assess the robustness of our findings, confidence in our findings would be enhanced by future replications in larger samples. Third, we are also limited by the cross-sectional nature of our study. While the results were consistent with many of our hypotheses, confidence would be increased through replications using longitudinal data. Fourth, while our study utilized one particular measure of neighborhood cohesion and found enlightening differences in the determinants of the two sub-constructs of sense of belonging and morale, future work may want to test whether other

subjective measures of cohesion that ask respondents to assess the relations within their neighborhood perform similarly (Sampson and Raudenbush 1999).[12] Finally, while our study focused on an attitudinal measure of cohesiveness, future research may want to explore the differences in neighborhood and community-level cohesiveness employing behavioral measures of cohesion from the social network literature to determine whether these findings replicate (Markovsky 1998; Markovsky and Lawler 1994; Moody and White 2003). In addition, studies adopting an ethnographic approach would be enlightening for how this process works at the neighborhood level.

Nonetheless, our findings highlight the importance for future studies to simultaneously test both neighborhood and community cohesion. The striking differences we noted in some of the determinants of these two forms of cohesion highlight the differences in the theoretical processes generating them. While our study simply focused on a single neighborhood, the results are striking enough that they suggest future research should explore these questions with larger samples. In addition, future studies may wish to explore how perceived cohesion with various non-geographical groups (e.g., ethnic groups, voluntary organizations) moderate the cohesiveness individuals feel with both the local neighborhood and the larger community.

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Tables and Figures

Table 1. Summary statistics for sample of one neighborhood in a southern city

Dependent Variables	Mean	Std. Dev
Neighborhood Sense of Belonging		
Sense of Belonging	7.41	2.26
Feel I am a member	7.68	2.16
Part of the neighborhood	7.55	2.28
Neighborhood Feelings of Morale		
Enthusiastic	8.13	2.01
Happy	8.49	1.74
It's the best	7.24	2.35
Community Sense of Belonging		
Sense of Belonging	6.85	1.95
Feel I am a member	6.84	1.89
Part of the community	6.99	1.90
Community Feelings of Morale		
Enthusiastic	7.55	1.78
Happy	8.12	1.66
It's the best	7.55	1.80
Independent Variables		
Network Measures		
Number of total ties	2.08	1.04
Number of close ties	0.67	0.47
Number of weak ties	1.41	0.86
Bonacich centrality score	0.71	0.70
Relative positive prestige score	0.33	0.46
Formal Network Measures		
Volunteer for Organizations	0.57	0.99
Frequency attend religious services	2.55	1.89
Other control variables		
Education	4.55	0.79
Household income	4.77	2.14
Hours work per week	43.65	13.66
Hours watch TV	5.16	5.65
Age	52.01	13.80
Female	0.54	0.50
Married	0.80	0.40
Number of children (< 18)	0.76	1.13

N = 86

Table 2. Latent Variable Model Predicting Neighborhood and Community Cohesion using demographic measures

	Neighborhood Sense of Belonging		Neighborhood Sense of Morale		Community Sense of Belonging		Community Sense of Morale	
	coef.	sig	coef.	sig	coef.	sig	coef.	sig
Formal Network Measures								
Volunteer for organizations	0.164		0.042		0.505	*	0.347	*
	(0.320)		(0.267)		(0.199)		(0.173)	
Frequency attend religious services	-0.191		-0.086		-0.173		-0.188	
	(0.175)		(0.170)		(0.123)		(0.139)	
SES/Availability								
Education	-0.074		-0.087		-0.382		-0.396	*
	(0.342)		(0.253)		(0.269)		(0.186)	
Household income	-0.107		0.075		-0.428	**	-0.291	†
	(0.165)		(0.132)		(0.114)		(0.152)	
Hours work per week	0.019		0.006		0.041	†	0.038	
	(0.023)		(0.026)		(0.023)		(0.025)	
Hours watch TV	-0.009		-0.008		-0.048		-0.017	
	(0.040)		(0.030)		(0.051)		(0.042)	
Demographic measures								
Age	0.027		0.000		0.000		-0.014	
	(0.026)		(0.024)		(0.026)		(0.021)	
Female	0.537		0.176		0.020		0.015	
	(0.549)		(0.479)		(0.361)		(0.326)	
Married	0.271		-0.121		-0.272		-0.079	
	(0.738)		(0.573)		(0.519)		(0.518)	
Number of children (< 18)	-0.113		-0.394		-0.061		-0.087	
	(0.377)		(0.345)		(0.244)		(0.204)	
R-squared	0.07		0.08		0.31		0.23	

*Note: ** p < .01; * p < .05; † p < .1. Robust standard errors corrected for household clustering in parentheses. N=86.*

Table 3. Latent Variable Model Predicting Neighborhood and Community Cohesion using various network measures

	Neighborhood Sense of Belonging		Neighborhood Sense of Morale		Community Sense of Belonging		Community Sense of Morale	
Model 1	coef.	sig	coef.	sig	coef.	sig	coef.	sig
Number of total ties	0.872	**	0.528	**	0.330		0.146	
	(0.205)		(0.196)		(0.214)		(0.158)	
R-squared	0.22		0.15		0.35		0.25	
Model 2								
Number of close ties	1.599	**	1.039	†	0.336		-0.176	
	(0.584)		(0.550)		(0.503)		(0.406)	
R-squared	0.17		0.13		0.32		0.22	
Model 3								
Number of weak ties	0.836	**	0.487	*	0.406	†	0.285	†
	(0.226)		(0.224)		(0.231)		(0.171)	
R-squared	0.16		0.12		0.35		0.27	
Model 4								
Bonacich centrality score	0.846	*	0.736	*	0.072		-0.247	
	(0.347)		(0.362)		(0.321)		(0.275)	
R-squared	0.11		0.13		0.30		0.22	

*Note: ** p < .01; * p < .05; † p < .1. Robust standard errors corrected for household clustering in parentheses. N=86.*

All models control for education, household income, hours work per week, hours watch TV, age, female, married, number of children (< 18), Number of organizations volunteer for, frequency attend religious services

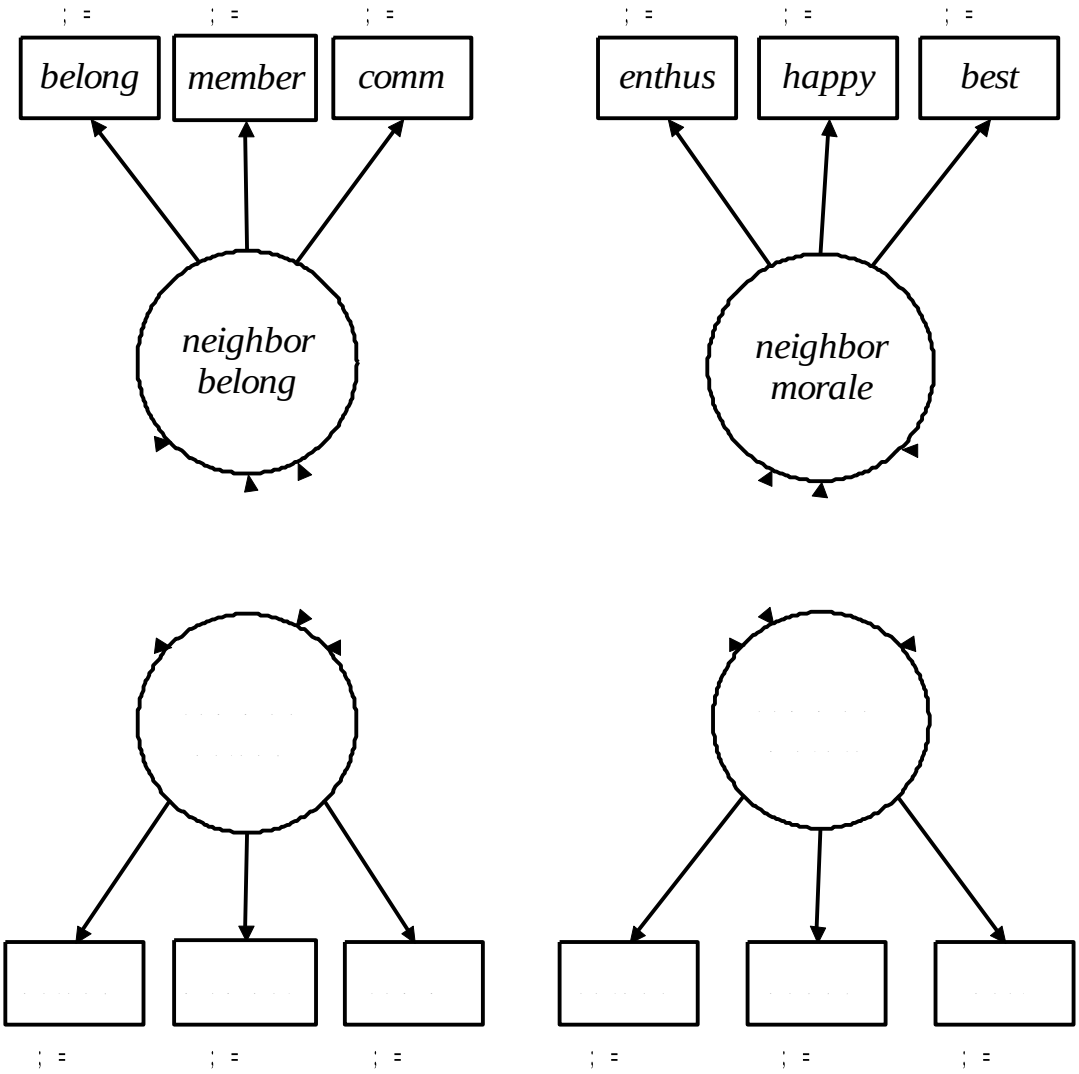
Table 4. Latent Variable Model Predicting Neighborhood and Community Cohesion using various network measures

	Neighborhood Sense of Belonging		Neighborhood Sense of Morale		Community Sense of Belonging		Community Sense of Morale	
Model 1	coef.	sig	coef.	sig	coef.	sig	coef.	sig
Number of close ties	1.361	*	0.903		0.168		-0.338	
	(0.608)		(0.567)		(0.504)		(0.421)	
Number of weak ties	0.685	**	0.378		0.404	†	0.341	†
	(0.236)		(0.239)		(0.226)		(0.176)	
R-squared	0.22		0.15		0.36		0.27	
Model 2								
Number of close ties	1.463	*	0.845		0.240		-0.166	
	(0.630)		(0.570)		(0.517)		(0.399)	
Number of weak ties	0.664	*	0.242		0.438		0.468	*
	(0.288)		(0.302)		(0.288)		(0.236)	
Bonacich Centrality score	-0.071		0.282		-0.310		-0.526	†
	(0.449)		(0.448)		(0.393)		(0.318)	
R-squared	0.22		0.16		0.36		0.29	

*Note: ** p < .01; * p < .05; † p < .1. Robust standard errors corrected for household clustering in parentheses. N=86.*

All models control for education, household income, hours work per week, hours watch TV, age, female, married, number of children (< 18), Number of organizations volunteer for, frequency attend religious services

Figure 1. Results of Confirmatory Factor Analysis Model of Cohesion Measures for Local Neighborhood and Larger Commu



Note: Figure gives correlations between latent factors; R^2's are listed in brackets

Endnotes

[1] While a number of studies have used the term "cohesion" when measuring it using both attitudinal and behavioral measures, these conceptualizations are questionable. For instance, some studies have used neighbor interaction or voluntary organization participation as components of cohesion (Bolan 1997; Hartnagel 1979). However, these are arguably *determinants* of cohesion, rather *indicators* of it. The large body of research using these measures as determinants of perceived cohesion is consistent with this assertion. On the other hand, an interesting future question concerns the relation between our measures of cohesion and that of Sampson et al. While we speculate that their approach asking respondents to conjecture on the attitudes and potential actions of others may be too intellectually challenging to provide accurate responses, it would be useful to include both of these measures in the same sample to allow studying their properties simultaneously. This would allow addressing the additional question of whether their unitary measure of "cohesion" is more closely related to our sub-constructs of sense of belonging or sense of morale. We suggest that these would be useful avenues of research of future work.

[2] Another viewpoint is that of the community of limited liability (Janowitz 1952) in which attachment is viewed as a function of residents' economic and social investments in a neighborhood. In this perspective, individuals only feel an attachment to the neighborhood to the degree that they have such social investments as having children or owning their home (Bolan 1997). Since our sample is largely of new homeowners in a largely homogeneous neighborhood in one city, we hold constant these other possible effects to allow focusing on network effects.

[3] A contrasting view is that of Wellman (1979), who suggests that the study of neighborhood cohesion is uninteresting and unimportant for understanding individual social networks. However, while social networks may indeed reach into the larger community and thus it is

necessary to understand these larger networks for understanding how individuals obtain emotional resources, this does not necessarily mean that neighborhood level cohesion is unimportant, or that the structure of larger networks may affect this perceived cohesion.

[4] Despite the fact that this scale has been used in several different studies of various different populations, we also explored whether our results differed when using two different exploratory factor analysis (EFA) strategies. In the first approach, we included all twelve measures in an EFA. Such an approach returned slightly different factors: while it returned four factors, the first two combined all six measures for the neighborhood cohesion and the community cohesion respectively. The third factor contained the questions regarding enthusiasm and happiness with the larger community, as well as evaluating both the neighborhood and the community as the best. The fourth factor contained the enthusiasm and happiness with the neighborhood measures. Our results predicting these outcomes mirrored those in the study: nearly all of the significant effects of our network measures were for the neighborhood-level factors (1 and 4). Only weak ties predicted community cohesion, just as we show in our latent variable models.

In the second approach, we performed four separate exploratory principal factor analyses on the three measures for each of the constructs. In each instance we found that a single factor was an appropriate solution (based on the existence of a single positive eigenvalue). We also found that these constructs were extremely well defined as indicated by the Cronbach alpha values (see footnote 8). We then ran both seemingly unrelated regression (SUR) and ordinary least squares analyses on the factor scores extracted from the EFA and found results very similar to those presented in our main analyses. The similarity of the results in the two different analyses strengthens our confidence in our results, despite our small sample size.

[5] While studies have often found homeownership status to have a positive effect on cohesion, we do not include this here since our sample consists almost entirely of homeowners. Likewise,

length of residence is often important, but the relative newness of this neighborhood precludes variability on this measure as well.

[6] We also performed various diagnostics on the data. There was no evidence of problematic outliers, and there were no collinearity problems, as the highest variance inflation factor was 3.17.

[7] The fit statistics suggest that our models fit fairly well. The chi-square for the final model is 321 on 168 df, $p < .01$. While significant, the RMSEA value of .11 is near values suggested by many as a criterion for satisfactory fit; other research points out that the RMSEA will over-reject in such small samples (Hu and Bentler 1999), particularly given that our high reliability indicates we have much stronger power to detect small differences than is normal in a sample this size (Matsueda and Bielby 1986; Saris and Satorra 1993). Nonetheless, due to the small sample size, we also tested our model using an exploratory factor analysis strategy and found similar results, as described in note 4.

[8] Another way of gauging the quality of these measures is to view their Cronbach alpha values. The alpha values are uniformly very high for our measures, with values of .94 and .90 for the neighborhood belonging and morale constructs, and values of .95 and .85 for the community belonging and morale constructs.

[9] Note that these correlations are smaller in magnitude than those between belonging and morale within a particular geographic level. Thus, there is a greater degree of correlation in a respondent's evaluation of belonging and morale at the neighborhood level than there is in his or her assessment of belonging at both the neighborhood and community level.

[10] It is also possible that there are differences between those who moved to this neighborhood from the local community, and those who moved here from a different community. We tested this by testing models that: 1) included a measure of the distance the household had moved to

their current location (natural logged since greater distance should have a diminishing effect), and 2) included categorical measures of those moving less than six miles to their current location, 6 to 50 miles, and more than 50 miles. In each instance, we found that including these measures in the model did not have a significant effect on any of the four outcomes. Additionally, there were no differences in the results for our key theoretical measures (results available upon request).

[11] Wen, Cagney, & Christakis (2005) viewed the relationship between frequency of network contacts and collective efficacy, a related but decidedly distinct concept from community cohesion. They did not find a significant relationship: individuals with greater network ties do not necessarily feel more able to address matters of common, collective concern.

[12] Nonetheless, the same concerns regarding the intellectual demands the Sampson scale places on respondents to assess the feelings and beliefs of other residents exist when asking them to report on the cohesion of the larger community. In fact, it likely is particularly taxing of respondents to ask them to assess the degree of cohesion in larger geographic units of analysis. Such an issue of measurement error in this alternative scale would need to be assessed in future research.